

# TREATING TINNITUS: WHERE DO WE STAND?

Michael Chrostowski, PhD



# GOALS FOR TODAY

1. Tinnitus: the sound and the emotion
2. Various options for tinnitus sufferers
3. The importance of hearing healthcare providers in treatment

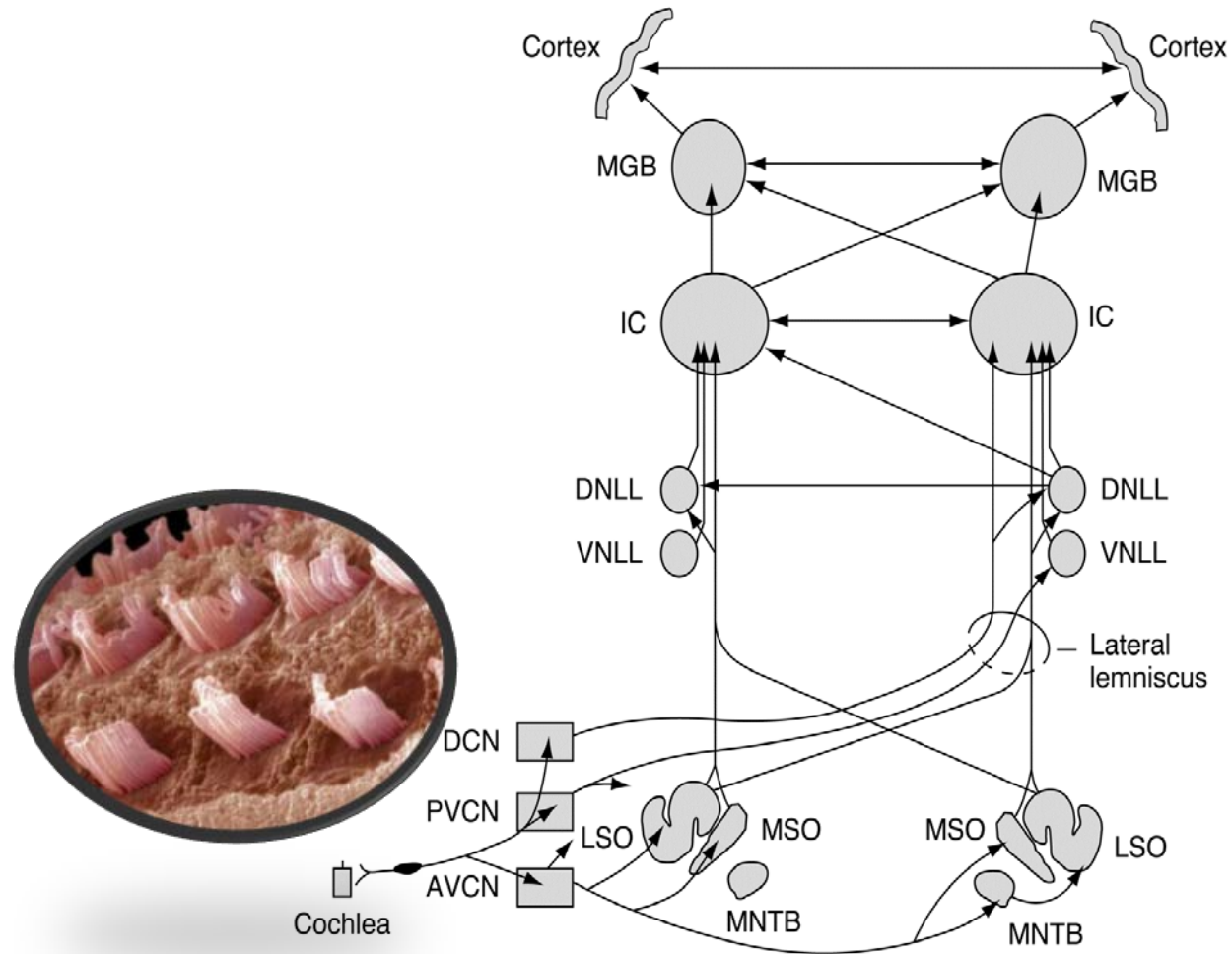
# **PART I: TINNITUS**

# THE PROBLEM WITH TREATING TINNITUS



- Tinnitus: **constant ringing in the ears**
- Leads to **depression, anxiety, poor quality of life**
- **Complex** and **variable**

# THE AUDITORY SYSTEM AND TINNITUS



# THE AUDITORY CORTEX AND TINNITUS

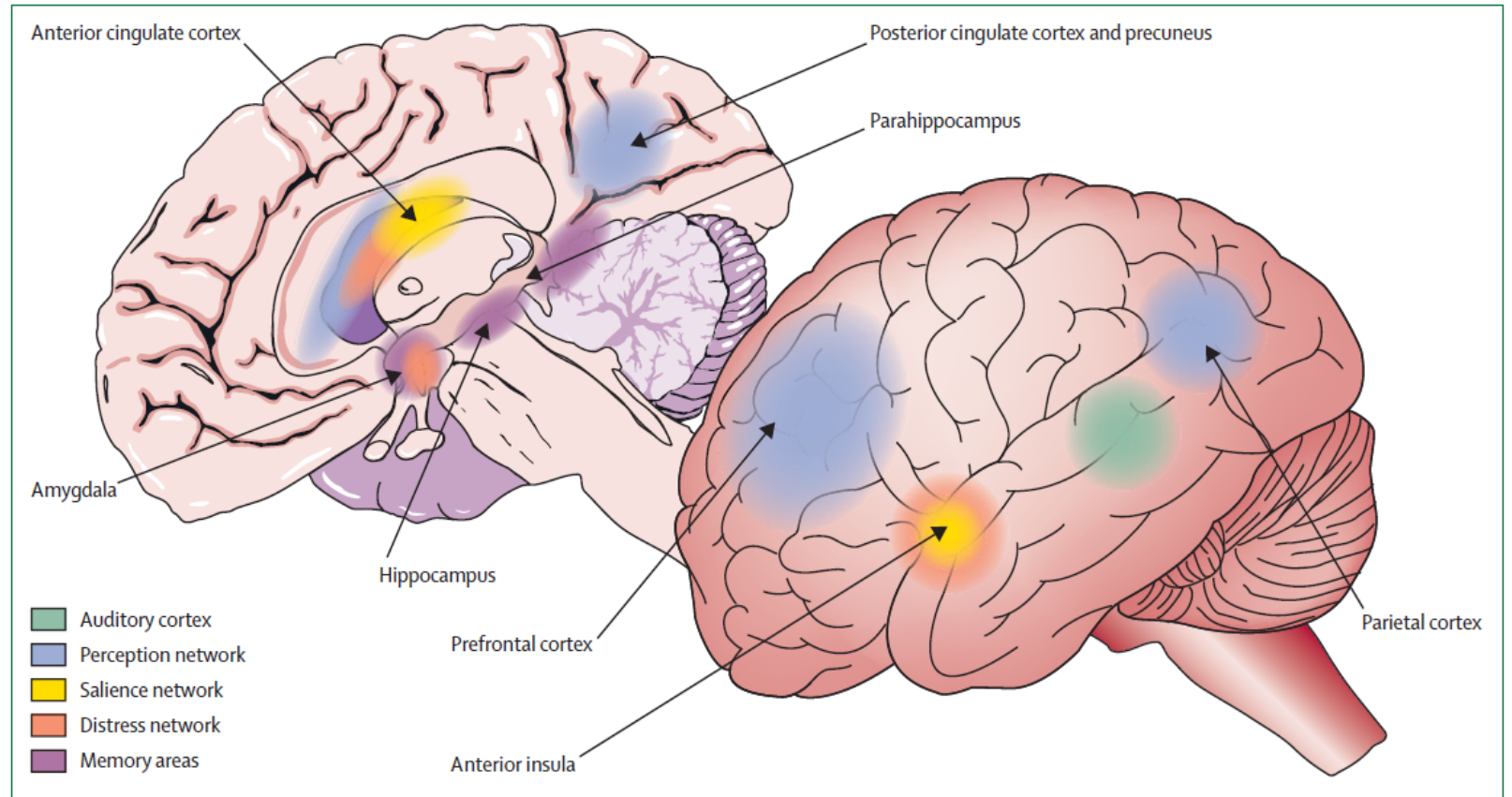
Tonotopic reorganization

Too much neural activity

Too much synchrony



# THE TINNITUS BRAIN



Langguth et al. 2013

# **PART II: TREATMENTS**



# EVALUATING TREATMENTS

- Types of clinical testing and trials
- Blinding
- Tinnitus scores

# MIRACLE CURES AND MORE

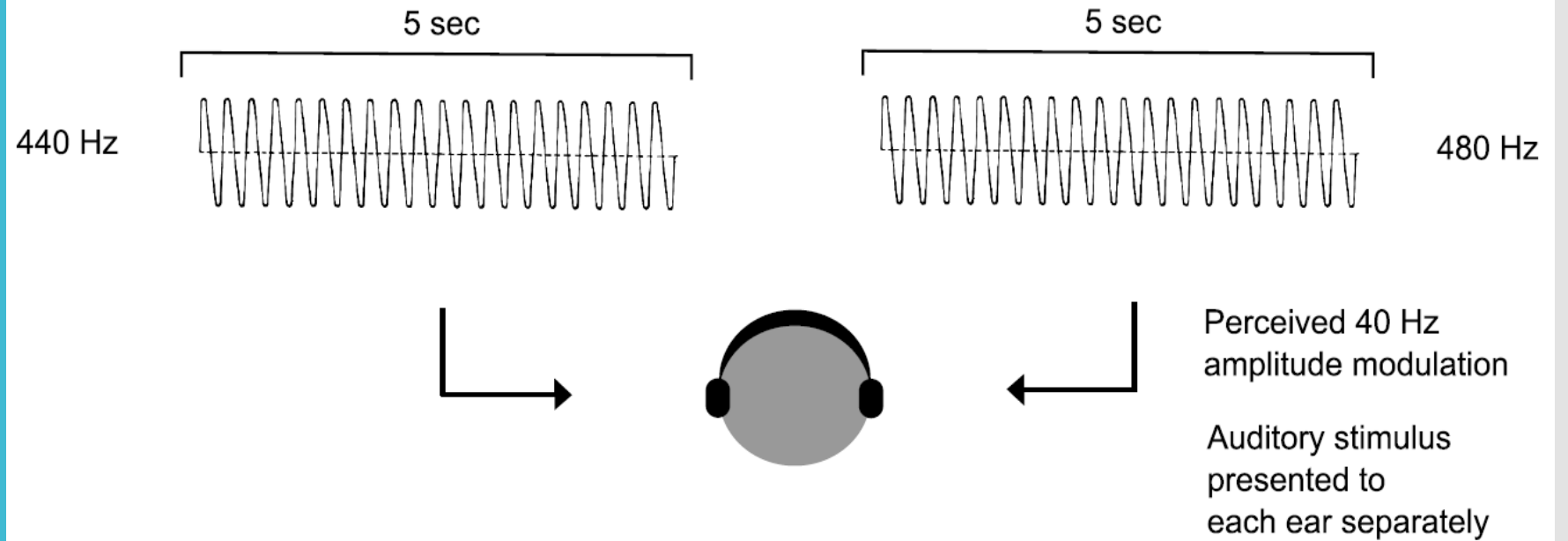
No evidence for the following according to attempted studies (Zenner et al., 2017)

- Natural remedies or ginkgo biloba
- Dietary supplements (e.g., Magnesium)
- Antioxidants
- Various pharmacological drug combinations (\*unless prescribed by doctor for related condition)
- Anything with the words “miracle cure”

# ELECTRICAL STIMULATION AND rTMS



# BINAURAL BEAT STIMULATION



Chaieb et al. 2015

# MASKERS

- White noise, pink noise or other standard sounds
- Partial masking is preferred (Hobson et al., 2012)
- Some hearing aids have built-in tinnitus maskers
- Early benefits but not as large as other treatments in the long term (Henry et al., 2006)



# WIDEX ZEN THERAPY

ZEN with and without counselling:

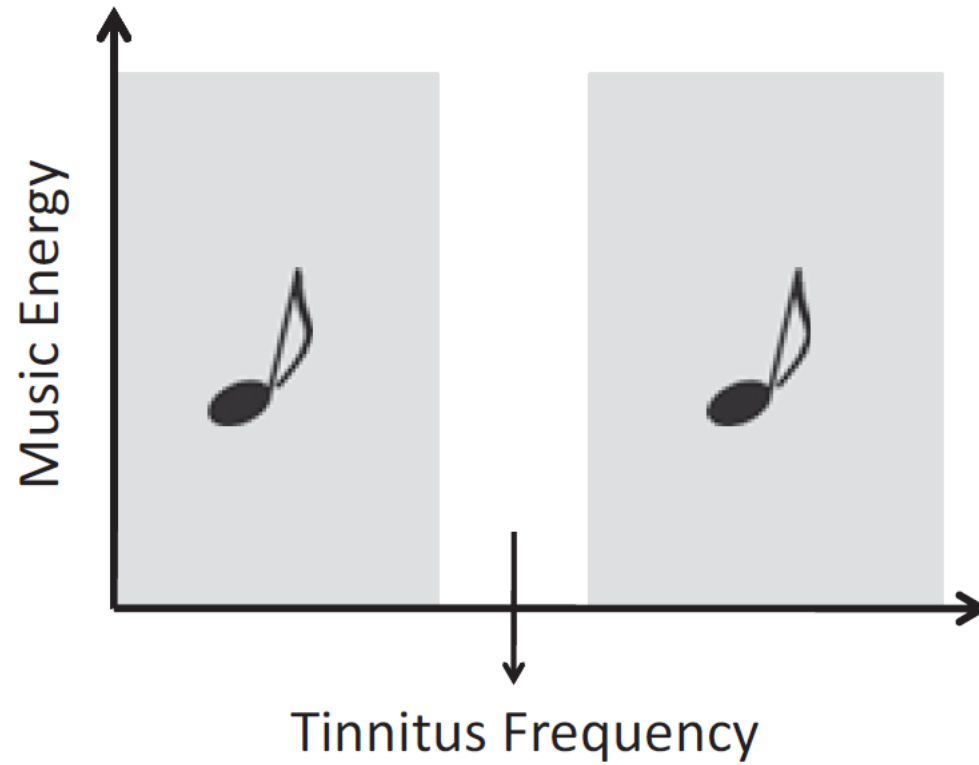
- **Sound only:** 34% achieved clinically significant benefits at 6 months (Sweetow and Sabes, 2012)
- **With counselling:** 70% achieved clinically significant benefits (Tyler, 2017)
- With the full program (counselling and sound therapy) about a 40% drop in tinnitus scores (Tyler, 2017)

# HEARING AIDS

- Can provide fairly quick results that are similar to that of maskers (Hoare et al., 2014; Parazzini et al., 2011; Henry et al., 2006)
- Results may plateau and are not possible for all
- Using **counselling alone** when amplification is needed is **half as effective** (Searchfield et al., 2017)



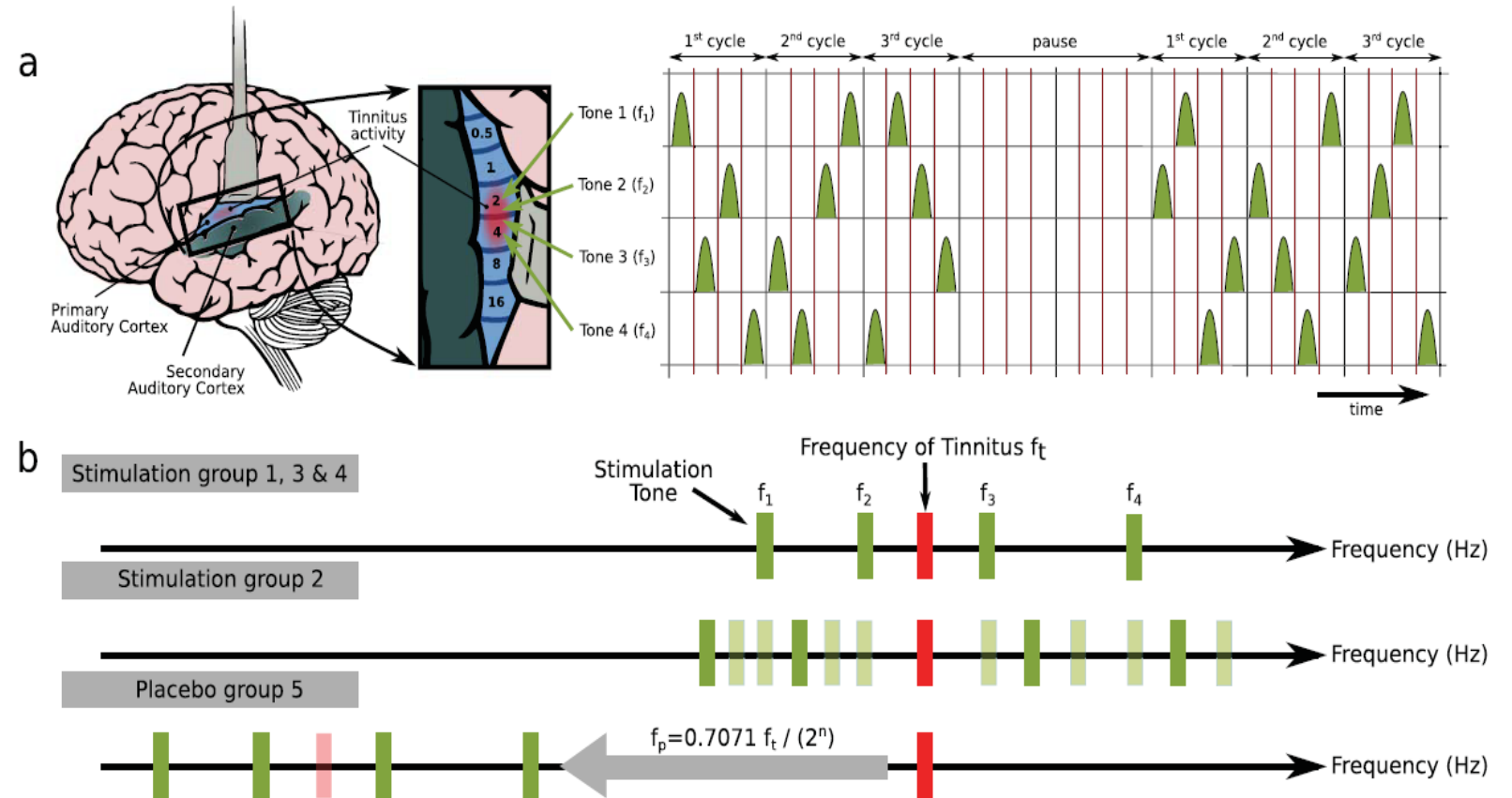
# NOTCHING SOUND THERAPIES



- Tinnitus reduced by about 15% after 6 months
- 25 to 30% after 12 months



## COORDINATED RESET NEUROMODULATION (DESYNCRA)



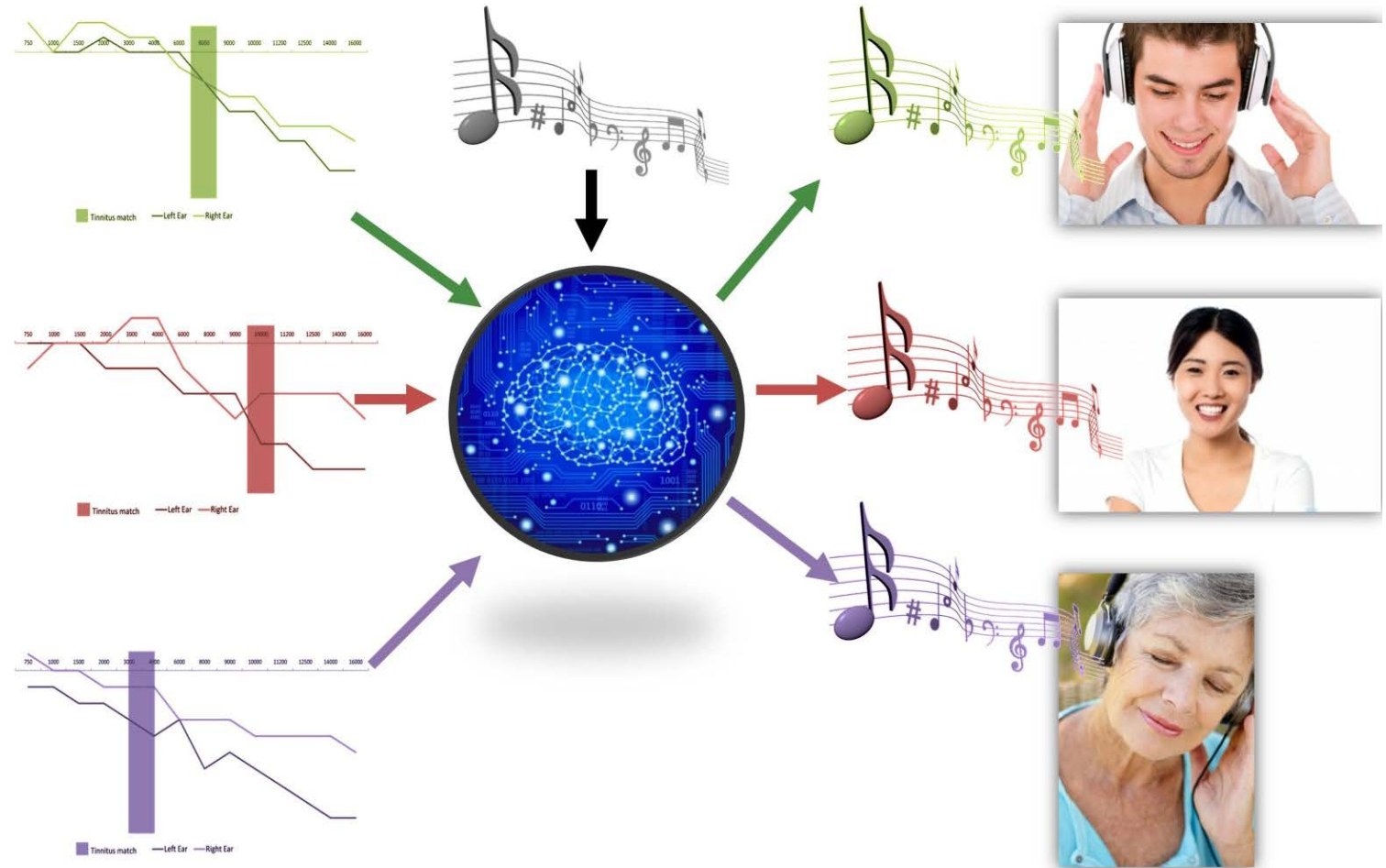
Tass et al., 2012

- 75% of people showed benefits in placebo-controlled trial (blinded)
- 30% benefit on average

# NEUROMONICS

- 75% -90% benefitted in a clinical trial (no control group)
- 40%-50% benefit on average after 3-6 months
- The therapy program includes habituation and counselling

# SOUND OPTIONS



- 85% -90% benefitted in a clinical trial (double-blind RCT with placebo group)
- 40% tinnitus reduction on average after 3-6 months

# TINNITUS RETRAINING THERAPY

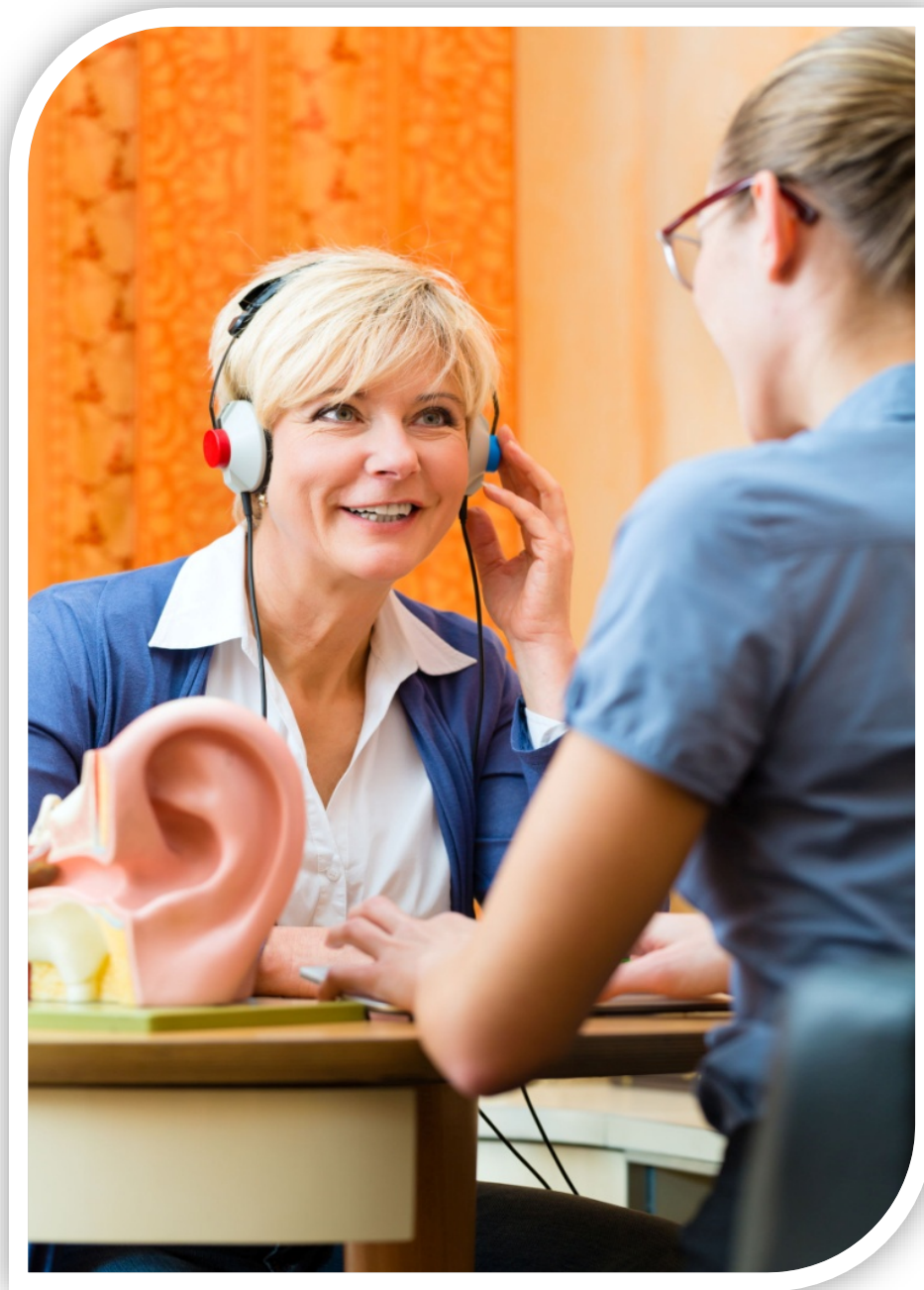
- Addresses habituation and counselling
- 18-month programs in clinical testing
- Reported benefits vary:
  - 20% (Zetterqvist et al. 2011) - RCT
  - 50%+ (Henry et al., 2006) - RCT
  - 40% (Herraiz et al., 2005) – RCT
  - Anywhere from 75% to 90% benefit

# COUNSELLING

- Results within 10 weeks
- 30-60% see benefits but benefits are up to 50% (Zetterqvist Westin et al. 2011; Andersson et al 2005; Kaldø et al 2008)
- Self-guided counselling programs can potentially improve emotional responses as much as one on one CBT (Nyenhuys, 2013; Jasper et al., 2014)

# **PART III: AUDIOLOGISTS**

WHAT WE  
CAN DO  
TOGETHER



**THANK YOU!**

**michael@soundoptions.ca**

**416-801-5356**

**1-866-688-3772 x700**